Philips Medical Systems

NEWSLETTER **Service**

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Information for : FSE Managers Specialists

OPTIMUS errors / warnings

03PA – 03PB

APPLIES TO: All OPTIMUS RAD and OPTIMUS R/F generators with release 3.x
All OPTIMUS C generators with release 1.x
All OPTIMUS RAD generators for US army application

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Symptom: Occurrence of error codes 03PA – 03PB.
Abnormally high values of area dose indication (if this option is present) and rapidly increasing tube load indication values after exposure termination.

Cause: Error codes 03PA – 03PB might be caused by a short circuit between signals **TB CU FR PO** and **TB CU FR NG**.

Remedy: Measurement of the short-circuit between signals TB CU FR PO and TB CU FR NG and elimination of the short-circuit.

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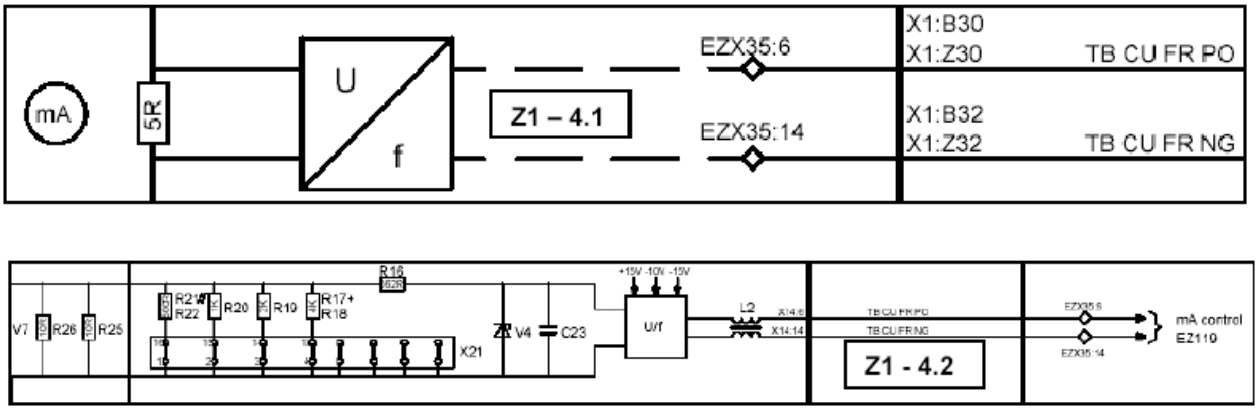
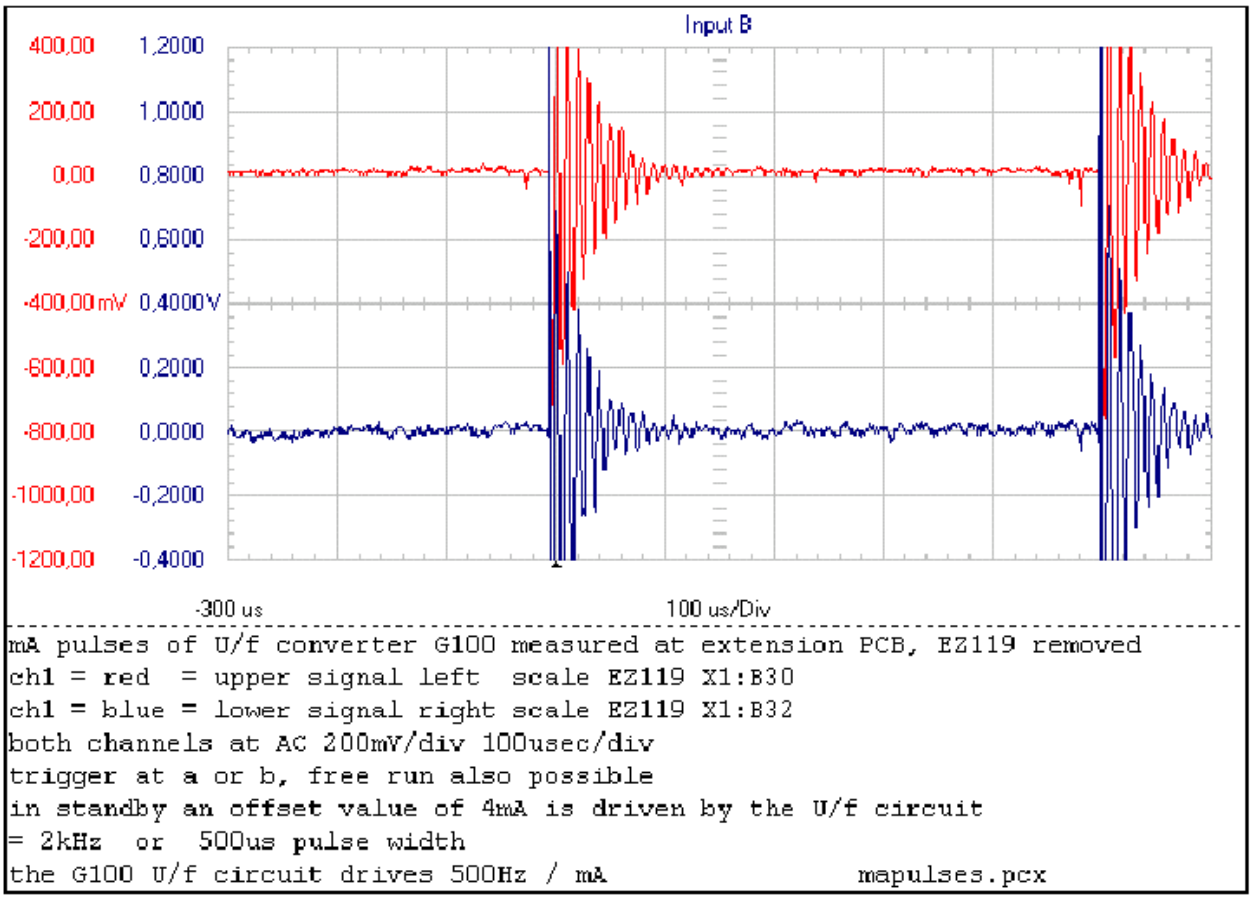
PROCEDURE

1. GENERAL

The actual value of the emission current is converted into pulses. This allows an error-free transmission from the measuring circuit to mA control EZ119.



In addition to the actual value of the emission current there is an offset value of 4mA driven by the U/f circuit. This offset current is subtracted from the emission current during exposure.


Input B
400,00 1,2000
200,00 1,0000
0,00 0,8000
-200,00 0,6000
-400,00 mV 0,4000 V
-600,00 0,2000
-800,00 0,0000
-1000,00 -0,2000
-1200,00 -0,4000
-300 us
100 us/Div
mA pulses of U/f converter G100 measured at extension PCB, EZ119 removed
ch1 = red = upper signal left scale EZ119 X1:B30
ch1 = blue = lower signal right scale EZ119 X1:B32
both channels at AC 200mV/div 100usec/div
trigger at a or b, free run also possible
in standby an offset value of 4mA is driven by the U/f circuit
= 2kHz or 500us pulse width
the G100 U/f circuit drives 500Hz / mA
mapulses.pcx

In standby the mA control checks every 5 minutes if the 4mA pulses are present. If not, a warning entry 03PB is logged.

2. ERROR 03PB IN ERROR LOG

If 03PB entries are present within a 5-minute interval it is a clear indication that the pulses are not present like in the following example:

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10 03PB 14-02-04 10:**01**:11 See detailed LOG or documentation of FU mA a
11 03PB 14-02-04 10:**06**:10 See detailed LOG or documentation of FU mA a
12 03PB 14-02-04 10:**11**:10 See detailed LOG or documentation of FU mA a
13 03PB 14-02-04 10:**16**:09 See detailed LOG or documentation of FU mA a
14 03PB 14-02-04 10:**21**:08 See detailed LOG or documentation of FU mA a
15 03PB 14-02-04 10:**26**:07 See detailed LOG or documentation of FU mA a
16 03PB 14-02-04 10:**31**:06 See detailed LOG or documentation of FU mA a
17 03PB 14-02-04 10:**36**:06 See detailed LOG or documentation of FU mA a
18 03PB 14-02-04 10:**41**:05 See detailed LOG or documentation of FU mA a
19 03PB 14-02-04 10:**46**:04 See detailed LOG or documentation of FU mA a
20 03PB 14-02-04 10:**51**:03 See detailed LOG or documentation of FU mA a
21 03PB 14-02-04 10:**56**:02 See detailed LOG or documentation of FU mA a

The most likely cause for the missing pulses is short-circuit between the two signals TB CU FR PO and TB CU FR NG.

3. ERROR 03PA DURING EXPOSURE

Error 03PA is logged and displayed due to the missing pulses of the emission current.

4. MEASUREMENT AND ELIMINATION OF THE SHORT-CIRCUIT

This can take place in cable G100X14:06-14 --- EZX35:06-14.
The cable must be removed at both ends.
If short-circuit is measured, replace the cable.

The short-circuit might be on the backpanel between EZX35:06 – 14 or measured at the backpanel connections EZ119 X1:B30 – B32.
EZX35 and the PCB mA control should not be connected.
An extender PCB can also be connected to EZ119 X1 to measure if there is short-circuit or if the lines are open.

If short-circuit is measured on the backpanel, the backpanel must be replaced (4512 108 09362).

An interim solution until the new backpanel arrives might be the following:
Heat up two soldering spots (locations are given on the next page) on the backpanel until the solder starts melting. Then hold the soldering iron on for another 5 seconds.
Check whether the short disappeared.

Heat up the two spots in the circle.

The backpanel view is from the rear side of the generator.

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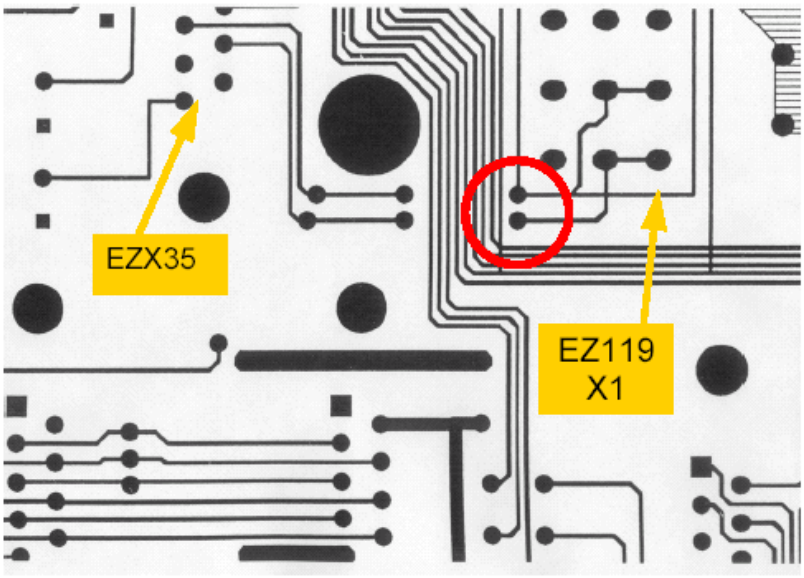
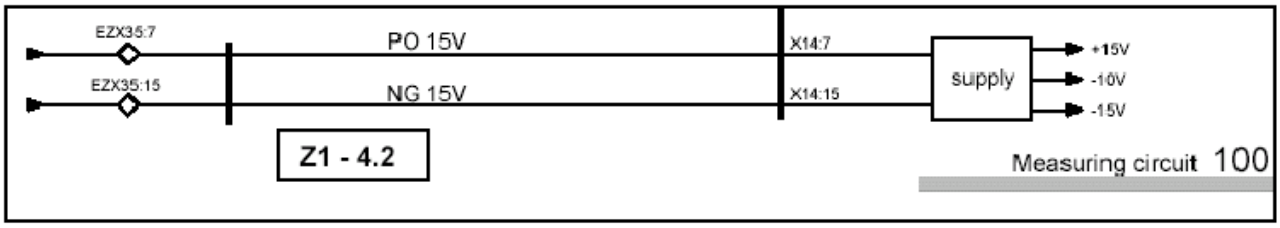


4.1. NO SHORT-CIRCUIT IS MEASURED

If no short can be measured there must be pulses coming from the HV transformer. It is sufficient to have the EZX35 – G100X14 connection in, EZ119 not.
The pulses must be visible with just the +/- 15V supply connected to the G100 measuring PCB.



The problem of the missing pulses should have been found at this point.

If they are present, but the problem persists, replace PCB mA control.

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